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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,422	03/16/2004	De-Qian Yang	252505-1010	2052
24504 7590 03/31/2008 THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 600 GALLERIA PARKWAY, S.E. STE 1500 ATLANTA, GA 30339-5994				
EXAMINER				
HAN, KWANG S				
ART UNIT		PAPER NUMBER		
4132				
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03/31/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/801,422

Applicant(s)

YANG ET AL.

Examiner

Kwang Han

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 2, 5-10, 12, 13, 16-18, 20-22, 23, 24, 27-32, 34, 37-39, and 41-42 are rejected on the ground of nonstatutory obviousness-type double patenting

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as being unpatentable over claims 1-7, 19, 24-26, 28-33, 39 and 41 of U.S. Patent No. 6844096 hereafter referred to as Yang '096 in view of van Ommering et al. (US 4565749).

Claims 1-7, 13, 19, 24-26, 28-33, 36, 39 and 41 of Yang '096 recite all the limitations of the instant claims 1, 2, 5-10, 13, 16-18, 20-21, 23, 24, 27-32, 37-39, and 41 except that of the two groups of threads that are glued onto the peripheries of the two walls of the soft pocket and the composition of said threads. It is taught by van Ommering et al. that when an electrode is a gas electrode the plates must also provide for a gas flow passage (Column 1 Lines 24-29). Van Ommering uses a gas permeable screen to act as the gas flow passage (Figure 3) which is in contact with the separator. It is also taught that the gas screen is preferably made of a lightweight material such as plastic (Column 4 Lines 33-39). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to apply van Ommering's screen as the thread gas passage in the metal-gas battery because the screen effectively provides a gas passage in the same manner as the threads by forming passageways. It would also have been obvious to one of ordinary skill in the art at the time of the invention to have threads made of a plastic because van Ommering teaches that a lightweight material such as plastic would be beneficial for this application because of its compressibility (Column 4 Lines 34-35).

Regarding claims 12, 22, 34, and 42 although the conflicting claims are not identical, they are not patentably distinct from each other because the support structure having a lower and upper portion and having a pair of metal

contacts to connect the cathodes are inherent. The support structure would require a lower and upper portion in order to properly support the anode structure. The metal contacts for the cathodes are also required for the purpose of electrically connecting the cathodes to the other components of the cell. A reference which is silent about a claimed invention's features is inherently anticipatory if the missing feature *is necessarily present in that which is described in the reference*. In re Robertson, 49 USPQ2d 1949 (1999).

4. Claims 3, 4, 25, and 26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Yang '096 and van Ommering as applied to claims 2 and 24 above, and further in view of Guo et al. (US 2003/0228522) and Linden et al. (Handbook of Batteries, 2002).

Regarding claims 3, 4, 25 and 26 Yang '096 and van Ommering do not disclose the use of an electrolyte that is saturated with zinc oxide. Yang '096 does disclose electrolytes of other compositions. Guo et al. teaches an air battery that uses an electrolyte that contains zinc oxides as a percentage of its composition (Paragraph 29). Zinc oxide is added to the electrolyte to reduce the amount of zinc gasging that can occur as is generally known in the art as taught by Linden for a zinc based cell (Section 12.2.3) and is therefore a result effective variable. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Guo's electrolyte in the metal gas battery of Yang '096 and van Ommering, since it has been held that discovering the optimum ranges for a result effective variable such as the degree of saturation with zinc oxide in

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the electrolyte involves only routine skill in the art in the absence of showing of criticality in the claimed range (MPEP 2144.05).

5. Claims 11 and 33 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Yang '096 and van Ommering as applied to claims 1 and 23 above and further in view of Schneider (US 4072803).

Regarding claims 11 and 33, Yang '069 discloses a base that is trapezoidal in shape. Schneider teaches having defined ends that include rounded corners as well as rounded end portions (Column 2 Lines 13-17) further teaching that the anode of the battery is made to conform to this shape (Column 2 Lines 37-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Schneider's rounded anode ends to the metal air battery because Schneider teaches the use of this design to improve fabrication of the battery. This design can further be applied to the applicant disclosed use for limitation of dropping of metal powder.

6. Claims 14, 15, 35 and 36 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Yang '096 and van Ommering as applied to claims 1, 14, 23, and 35 above and further in view of Leffel (US 1085743).

Regarding claims 14, 15, 35 and 36, Yang '096 discloses that the anode in the soft pocket is retained by elastic elements but is silent towards the use of a hook to hold the anode. Leffel teaches that a hook can be used as a support for

an anode in an electrochemical device (Lines 10-11; Figures 1-5). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use Leffel's hook in the metal air battery to provide support for the anode within the soft pocket for the benefit of providing a simple means to support the anode of Yang modified by van Ommering.

7. Claims 19 and 40 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Yang '096 and van Ommering as applied to claims 1 and 23 above and further in view of Niksa et al. (US 4950561).

Regarding claims 19 and 40, Yang '096 disclose the use of at least one bolt and nut to form the closing mechanism (Claim 7 and 33) but is silent as to the use of elbow tubes located at the four corners of the two separators. Niksa teaches the use of "U" shaped jumper bars to connect the multiple cells (Column 11 Lines 2-7) of a metal air battery with removable anodes. It would have been obvious to apply Niksa's jumper bars as elbow tubes in the metal air battery because these bars can provide better contact and connection between the individual cells.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./
Examiner, Art Unit 4132

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 4132